

BÁO CÁO THỰC HÀNH LAP 1 LẬP TRÌNH HƯỚNG ĐỐI TƯỢNG

The Very First Java Programs

2.2.1 Write, compile the first Java application

```
1 //Nguyễn Văn Cuong - 20215006
2 🚫 Example 1: HelloWorld.java
3 public class HelloWorld {
4     Run | Debug
5     public static void main(String[] args){
6         System.out.println(x:"Xin chao \n cac ban!");
7         System.out.println(x:"Hello \t world!");
8     }
9 }
```

PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL PORTS

Windows PowerShell
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PS C:\CUONG\University\2023-1\OOP\IT3103.732872.2023.1.20215006.NguyenVanCuong> & 'C:\Program Files\Java\jdk-11.0.10\bin\java.exe' '-cp' 'C:\Users\CUONG\AppData\Roaming\Code\User\workspaceStorage\89c5ac7\bin' 'HelloWorld'

Xin chao
cac ban!
Hello world!

2.2.2 Write, compile the first dialog Java application

```
Lab01 > FirstDialog.java > FirstDialog > main(String[])
1 //Nguyen Van Cuong - 20215006
2 //Example 2: FirstDialog.java
3 import javax.swing.JOptionPane;
4 public class FirstDialog {
5     Run | Debug
6     public static void main(String[] args){
7         JOptionPane.showMessageDialog(parentComponent:null, message:"Hello world! How are you?");
8         System.exit(status:0);
9     }
10 }
```

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PS C:\CUONG\University\2023-1\OOP\IT3103.732872.2023.1.20215006.NguyenVanCuong> & 'C:\Program Files\Java\jdk-11.0.10\bin\java.exe' '-cp' 'C:\Users\CUONG\AppData\Roaming\Code\User\workspaceStorage\89c5ac7\bin' 'FirstDialog'

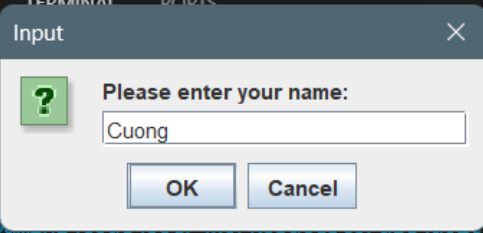
Message

Hello world! How are you?

OK

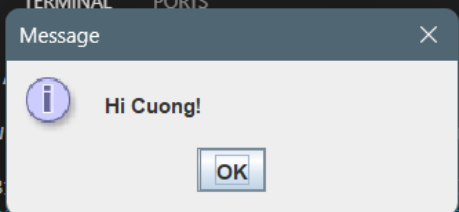
2.2.3 Write, compile, and run the following example

```
1 //Nguyen Van Cuong - 20215006
2 /*Example 3: HelloNameDialog.java
3 import javax.swing.JOptionPane;
4 public class HelloNameDialog {
5     Run | Debug
6     public static void main(String[] args){
7         String result;
8         result = JOptionPane.showInputDialog(message:"Please enter your name: ");
9         JOptionPane.showMessageDialog(parentComponent:null, "Hi " + result + "!");
10        System.exit(status:0);
11    }
12 }
```



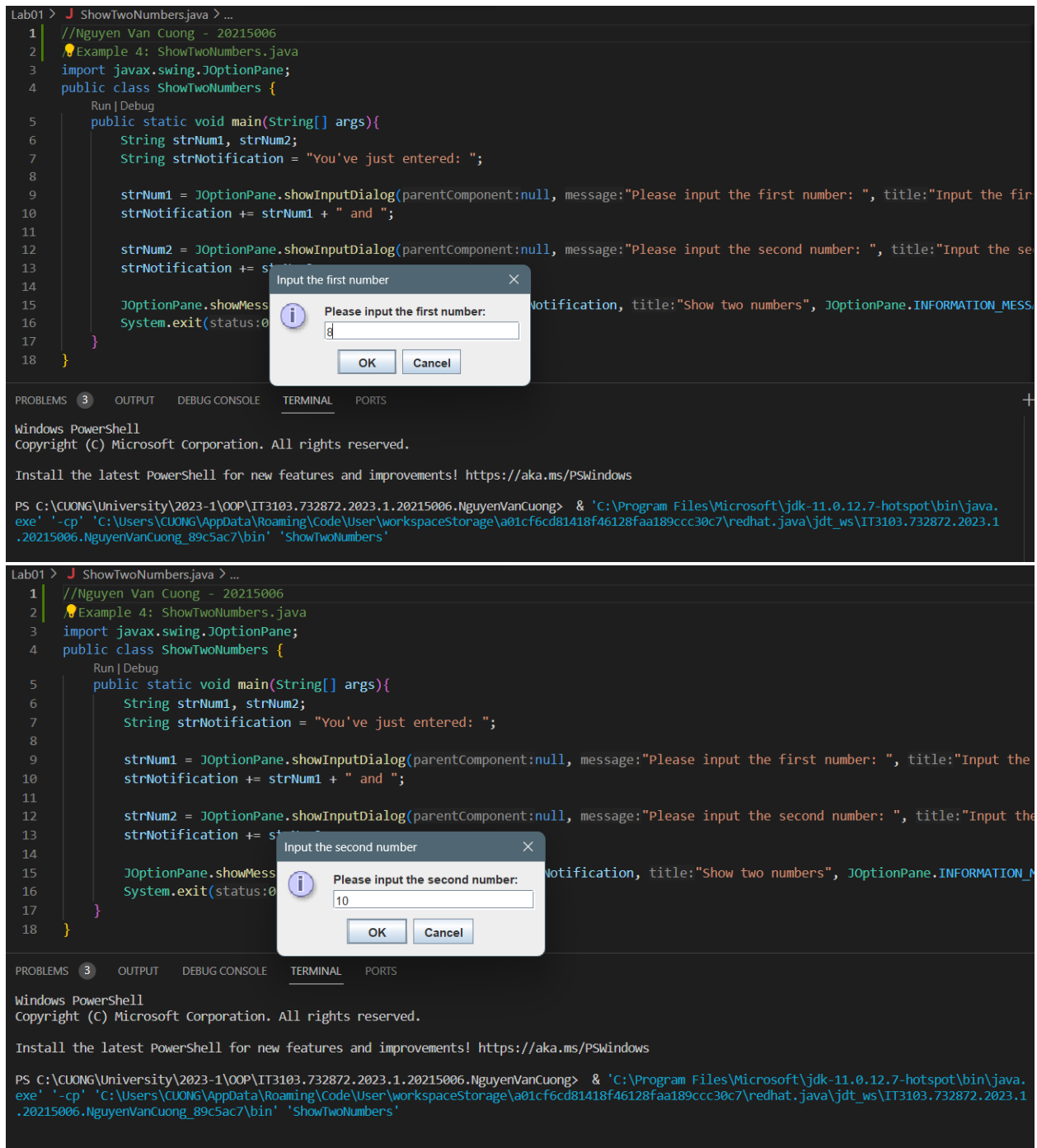
Windows PowerShell
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PS C:\CUONG\University\2023-1\OOP\IT3> javac -cp 'C:\Users\CUONG\AppData\Roaming\Microsoft\Windows\CurrentVersion\Shell\Extensions\Java\bin' 'HelloNameDialog.java' & 'C:\Program Files\Java\jdk-11.0.10\bin\java.exe' -cp 'C:\Users\CUONG\AppData\Roaming\Microsoft\Windows\CurrentVersion\Shell\Extensions\Java\bin' 'HelloNameDialog'

```
Lab01 > HelloNameDialog.java > ...
1 //Nguyen Van Cuong - 20215006
2 /*Example 3: HelloNameDialog.java
3 import javax.swing.JOptionPane;
4 public class HelloNameDialog {
5     Run | Debug
6     public static void main(String[] args){
7         String result;
8         result = JOptionPane.showInputDialog(message:"Please enter your name: ");
9         JOptionPane.showMessageDialog(parentComponent:null, "Hi " + result + "!");
10        System.exit(status:0);
11    }
12 }
```



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PS C:\CUONG\University\2023-1\OOP\IT3> javac -cp 'C:\Users\CUONG\AppData\Roaming\Microsoft\Windows\CurrentVersion\Shell\Extensions\Java\bin' 'HelloNameDialog.java' & 'C:\Program Files\Java\jdk-11.0.10\bin\java.exe' -cp 'C:\Users\CUONG\AppData\Roaming\Microsoft\Windows\CurrentVersion\Shell\Extensions\Java\bin' 'HelloNameDialog'

2.2.3 Write, compile, and run the following example



```
Lab01 > J ShowTwoNumbers.java > ...
1 //Nguyen Van Cuong - 20215006
2 Example 4: ShowTwoNumbers.java
3 import javax.swing.JOptionPane;
4 public class ShowTwoNumbers {
5     Run | Debug
6     public static void main(String[] args){
7         String strNum1, strNum2;
8         String strNotification = "You've just entered: ";
9
10        strNum1 = JOptionPane.showInputDialog(parentComponent:null, message:"Please input the first number: ", title:"Input the fir
11        strNotification += strNum1 + " and ";
12
13        strNum2 = JOptionPane.showInputDialog(parentComponent:null, message:"Please input the second number: ", title:"Input the se
14        strNotification += strNum2 + " and ";
15
16        JOptionPane.showMessageDialog(parentComponent:null, strNotification, title:"Show two numbers", JOptionPane.INFORMATION_MESS
17        System.exit(status:0);
18    }
19 }
```

Input the first number

Please input the first number:

8

OK Cancel

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PS C:\CUONG\University\2023-1\OOP\IT3103.732872.2023.1.20215006.NguyenVanCuong> & 'C:\Program Files\Microsoft\jdk-11.0.12-hotspot\bin\java.exe' '-cp' 'C:\Users\CUONG\AppData\Roaming\Code\User\workspaceStorage\401cf6cd81418f46128faa189ccc30c7\redhat.java\jdt_ws\IT3103.732872.2023.1.20215006.NguyenVanCuong_89c5ac7\bin' 'ShowTwoNumbers'

```
Lab01 > J ShowTwoNumbers.java > ...
1 //Nguyen Van Cuong - 20215006
2 Example 4: ShowTwoNumbers.java
3 import javax.swing.JOptionPane;
4 public class ShowTwoNumbers {
5     Run | Debug
6     public static void main(String[] args){
7         String strNum1, strNum2;
8         String strNotification = "You've just entered: ";
9
10        strNum1 = JOptionPane.showInputDialog(parentComponent:null, message:"Please input the first number: ", title:"Input the
11        strNotification += strNum1 + " and ";
12
13        strNum2 = JOptionPane.showInputDialog(parentComponent:null, message:"Please input the second number: ", title:"Input the
14        strNotification += strNum2 + " and ";
15
16        JOptionPane.showMessageDialog(parentComponent:null, strNotification, title:"Show two numbers", JOptionPane.INFORMATION_M
17        System.exit(status:0);
18    }
19 }
```

Input the second number

Please input the second number:

10

OK Cancel

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PS C:\CUONG\University\2023-1\OOP\IT3103.732872.2023.1.20215006.NguyenVanCuong> & 'C:\Program Files\Microsoft\jdk-11.0.12-hotspot\bin\java.exe' '-cp' 'C:\Users\CUONG\AppData\Roaming\Code\User\workspaceStorage\401cf6cd81418f46128faa189ccc30c7\redhat.java\jdt_ws\IT3103.732872.2023.1.20215006.NguyenVanCuong_89c5ac7\bin' 'ShowTwoNumbers'

```

Lab01 > J ShowTwoNumbers.java > ...
1 //Nguyen Van Cuong - 20215006
2 Example 4: ShowTwoNumbers.java
3 import javax.swing.JOptionPane;
4 public class ShowTwoNumbers {
5     public static void main(String[] args){
6         String strNum1, strNum2;
7         String strNotification = "You've just entered: ";
8
9         strNum1 = JOptionPane.showInputDialog(parentComponent:null, message:"Please input the first number: ", title:"Input the
10        strNotification += strNum1 + " and ";
11
12        strNum2 = JOptionPane.showInputDialog(parentComponent:null, message:"Please input the second number: ", title:"Input the
13        strNotification += strNum2 + " and ";
14
15        JOptionPane.showMessageDialog(parentComponent:null, strNotification, title:"Show two numbers", JOptionPane.INFORMATION_M
16        System.exit(status:0);
17    }
18 }

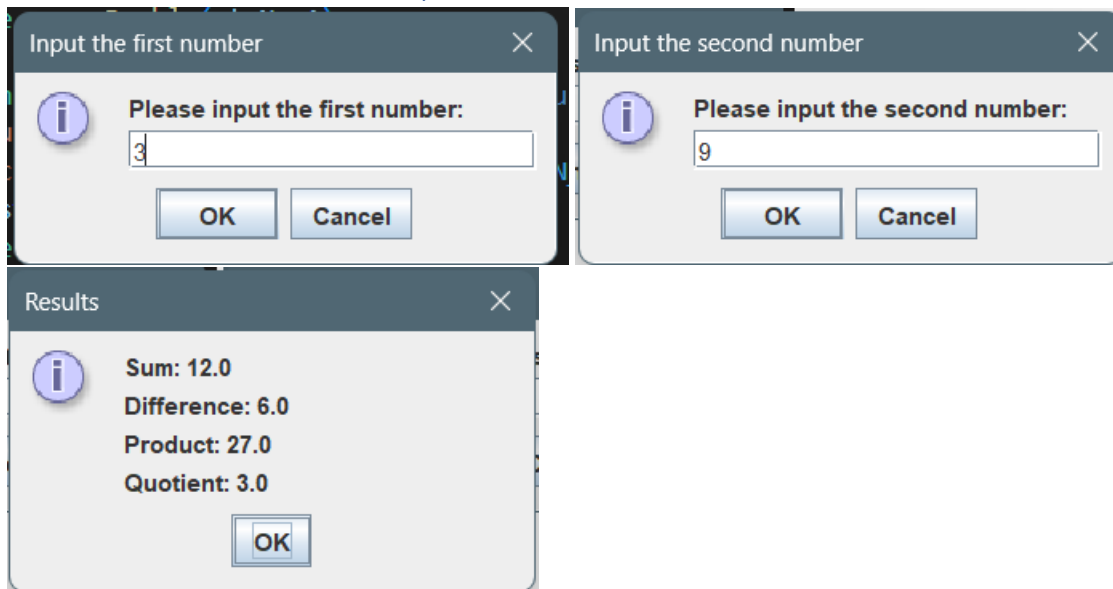
```

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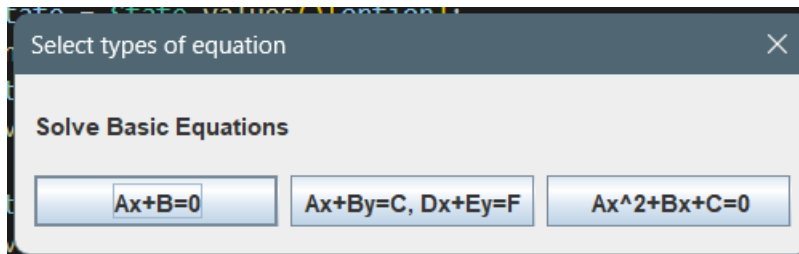
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PS C:\CUONG\University\2023-1\OOP\IT3103.732872.2023.1.20215006.NguyenVanCuong> & 'C:\Program Files\Microsoft\jdk-11.0.12-hotspot\bin\java.exe' '-cp' 'C:\Users\CUONG\AppData\Roaming\Code\User\workspaceStorage\ao1cf6cd81418f46128faa189ccc30c7\redhat.java\jdt_ws\IT3103.732872.2023.1.20215006.NguyenVanCuong_89c5ac7\bin' 'ShowTwoNumbers'

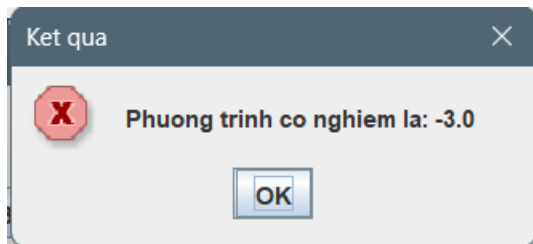
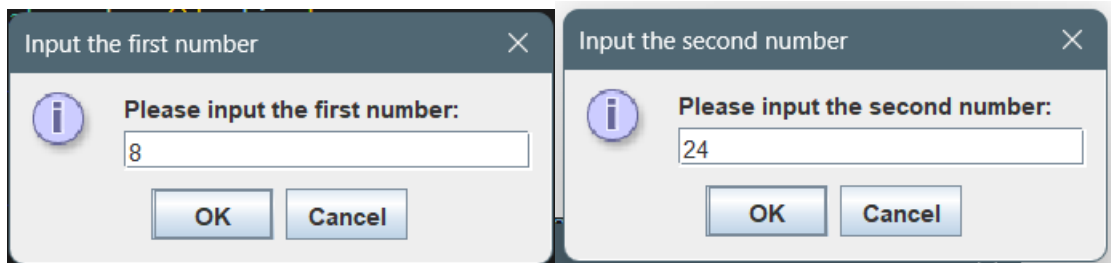
2.2.5 Write a program to calculate sum, difference, product, and quotient of 2 double numbers which are entered by users



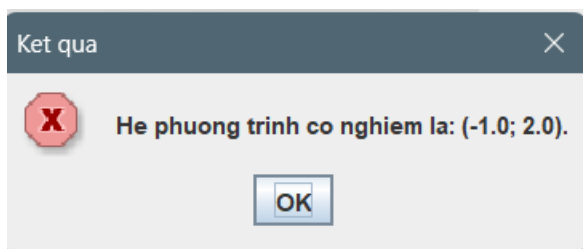
2.2.6



PT bậc 1, 1 ẩn: $Ax+B=0$



Hệ PT bậc 1, 2 ẩn: $Ax+By=C, Dx+Ey=F$
 $A=3; B=4; C=5; D=6; E=7; F=8$

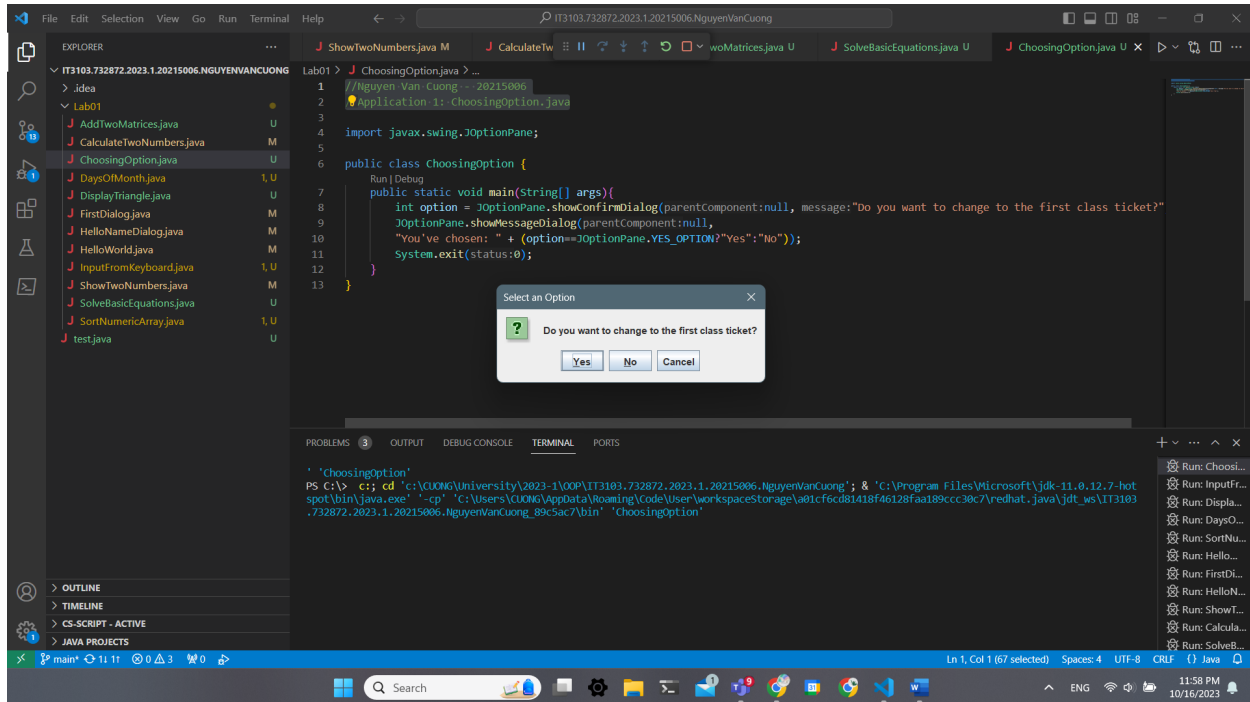


PT bậc 2, 1 ẩn: $Ax^2+Bx+C=0$
 $A=1; B=4; C=3$

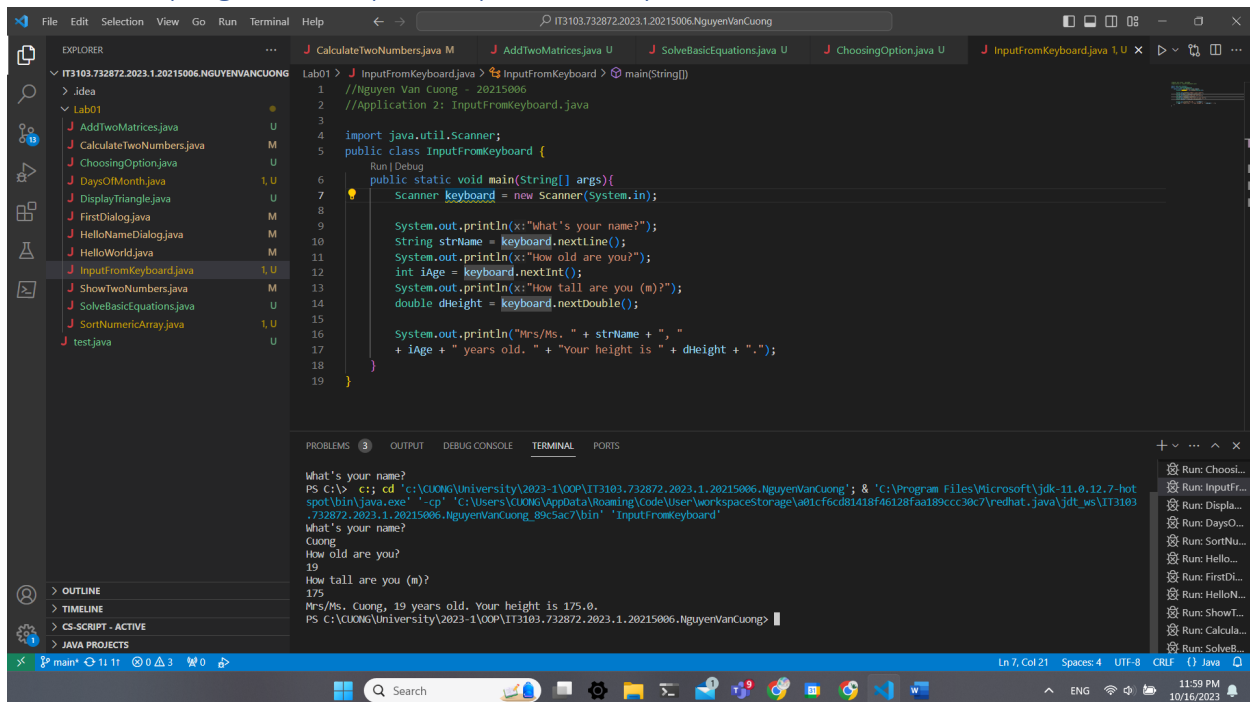


Exercises

6.1 Write, compile and run the ChoosingOption program:



6.2 Write a program for input/output from keyboard



6.3 Write a program to display a triangle with a height of n stars (*), n is entered by users.

```

1 //Nguyen Van Cuong -- 20215006
2 //Application 3: DisplayTriangle.java
3 import java.util.Scanner;
4 public class DisplayTriangle {
5     public static void main(String[] args){
6         Scanner keyboard = new Scanner(System.in);
7         System.out.println("Input n stars: ");
8         int n = keyboard.nextInt();
9         for (int i = 1; i <= n; i++){
10             for (int j = 1; j <= n - i; j++){
11                 System.out.print(" ");
12             }
13             for (int k = 1; k <= 2 * i - 1; k++){
14                 System.out.print(s:"*");
15             }
16             System.out.println();
17         }
18         keyboard.close();
19     }
20 }
21
*****
PS C:\> cd 'C:\CUONG\University\2023-1\OOP\IT3103.732872.2023.1.20215006.NguyenVanCuong'; & 'C:\Program Files\Microsoft\jdk-11.0.12-hotspot\bin\java.exe' '-cp' 'C:\Users\CUONG\AppData\Roaming\Code\User\workspaceStorage\01cf6cd81418f46128faa189ccc30c7\redhat_java\jdt_ws\IT3103.732872.2023.1.20215006.NguyenVanCuong_89c5ac7\bin' 'DisplayTriangle'
Input n stars:
6
*
* *
* * *
* * * *
* * * * *
*****
PS C:\CUONG\University\2023-1\OOP\IT3103.732872.2023.1.20215006.NguyenVanCuong>

```

6.4 Write a program to display the number of days of a month, which is entered by users (both month and year). If it is an invalid month/year, ask the user to enter again.

```

1 //Nguyen Van Cuong -- 20215006
2 //Application 4: DaysOfMonth.java
3 import java.util.Scanner;
4 public class DaysOfMonth {
5     // kiểm tra xem năm nhập vào có phải năm nhuận hay không
6     public static int KiemTraNam (int nam){
7         // nếu năm nhuận thì bằng 1, không nhuận thì bằng 0
8         if(nam%400)
9             { if(nam%100==0 && nam%400==0 && nam%4==0)
10                 return 1;
11             }
12         else if(nam%4==0) return 1;
13         return 0;
14     }
15     // hàm check chuẩn mực nhập vào
16     public static int chuyendoi(String t){
17         if (t.equals(anObject:"Jan.") || t.equals(anObject:"Jan") || t.equals(anObject:"January") || t.equals(anObject:"1")) return 1;
18         if (t.equals(anObject:"Feb.") || t.equals(anObject:"Feb") || t.equals(anObject:"February") || t.equals(anObject:"2")) return 2;
19         if (t.equals(anObject:"Mar.") || t.equals(anObject:"Mar") || t.equals(anObject:"March") || t.equals(anObject:"3")) return 3;
20     }
21 }
22
0215006.NguyenVanCuong; & 'C:\Program Files\Microsoft\jdk-11.0.12-hotspot\bin\java.exe' '-cp' 'C:\Users\CUONG\AppData\Roaming\Code\User\workspaceStorage\01cf6cd81418f46128faa189ccc30c7\redhat_java\jdt_ws\IT3103.732872.2023.1.20215006.NguyenVanCuong_89c5ac7\bin' 'DaysOfMonth'
Nhập tháng 7
Nhập vào năm: (nam>0) 2022
7/2022 có 31 ngày
PS C:\CUONG\University\2023-1\OOP\IT3103.732872.2023.1.20215006.NguyenVanCuong> cd 'C:\CUONG\University\2023-1\OOP\IT3103.732872.2023.1.20215006.NguyenVanCuong'; & 'C:\Program Files\Microsoft\jdk-11.0.12-hotspot\bin\java.exe' '-cp' 'C:\Users\CUONG\AppData\Roaming\Code\User\workspaceStorage\01cf6cd81418f46128faa189ccc30c7\redhat_java\jdt_ws\IT3103.732872.2023.1.20215006.NguyenVanCuong_89c5ac7\bin' 'DaysOfMonth'
Nhập tháng 2
Nhập vào năm: (nam>0) 2020
2/2020 có 28 ngày
PS C:\CUONG\University\2023-1\OOP\IT3103.732872.2023.1.20215006.NguyenVanCuong>

```

6.5 Write a Java program to sort a numeric array, and calculate the sum and average value of array elements.

```

19 public static void SumEndAverage(int a[], int n){
20     long sum=0;
21     for (int i=0;i<n;i++) sum+=a[i];
22     System.out.print("Tổng của mảng là: " + sum + "\nTrung bình của mảng là: " + sum/n);
23     System.out.println("\n");
24 }
25 // in mảng
26 public static void Printarray(int a[], int n){
27     System.out.println("Mang ban vua nhap la: ");
28     for (int i=0;i<n;i++) System.out.print(a[i]+", ");
29     System.out.println("\n");
30 }
31
32 Run | Debug
33 public static void main(String[] args) {
34     Scanner sc = new Scanner(System.in);
35     System.out.print("Nhập vào số lượng phần tử của mảng: ");
36     int n = sc.nextInt();
37
38     int a[] = new int[n];
39     for (int i=0;i<n;i++){
40         a[i] = sc.nextInt();
41     }
42     SortNumericArray.sort(a);
43     SumEndAverage(a, a.length);
44     Printarray(a, a.length);
45 }

```

Output:

```

Nhập vào số lượng phần tử của mảng: 5
a[0]: 3
a[1]: 8
a[2]: -9
a[3]: 3
a[4]: 2
Mảng ban vua nhap la:
3, 8, -9, 3, 2,
Mảng đã được xếp từ nhỏ tới lớn là: -9, 2, 3, 3, 8,
Tổng của mảng là: 7
Trung bình của mảng là: 1

```

6.6 Write a Java program to add two matrices of the same size.

```

1 //Nguyen Van Cuong - 20215006
2 //Application 6: AddTwoMatrices.java
3 public class AddTwoMatrices {
4     public static void main(String[] args) {
5         int rows = 2, columns = 4;
6         //Khái báo hai ma trận dưới dạng mảng đa chiều
7         int[][] MatrixA = {{7, 9, 0, 1}, {2, -3, 1, -5}};
8         int[][] MatrixB = {{6, 4, 5, 2}, {5, 4, -1, 5}};
9         /* Khai báo một tổng ma trận, đó sẽ là tổng của MatrixA và MatrixB,
10          ma trận tổng sẽ có cùng các hàng và cột như các ma trận đã cho.
11          */
12         int[][] sum = new int[rows][columns];
13         for (int i = 0; i < rows; i++) {
14             for (int j = 0; j < columns; j++) {
15                 sum[i][j] = MatrixA[i][j] + MatrixB[i][j];
16             }
17         }
18         //Hiển thị ma trận tổng
19         System.out.println("Ma trận tổng của hai ma trận đã cho là: ");
20         for (int i = 0; i < rows; i++) {
21             for (int j = 0; j < columns; j++) {
22                 System.out.print(sum[i][j] + " ");
23             }
24             System.out.println();
25         }
26     }
27 }

```

Output:

```

Ma trận tổng của hai ma trận ?? cho là:
13 13 5 3
7 1 0 0

```